R E P O R T R E S U M E S

ED 017 140 EF 001 247

ARCHITECTURE AND EQUIPMENT FOR THE LANGUAGE LABORATORY.

BY- BRUBAKER, CHARLES WILLIAM
PERKINS AND WILL, ARCHITECTS, CHICAGO, ILL.

PUB DATE 61

EDRS PRICE MF-$0.25 HC-$0.72 16P.

DESCRIPTORS- *ELECTRONIC CLASSROOMS, *LANGUAGE LABORATORIES, *LANGUAGE LABORATORY EQUIPMENT, *LANGUAGE LABORATORY USE, AUDIOVISUAL AIDS, EDUCATIONAL EQUIPMENT, ELECTRONIC EQUIPMENT, EQUIPMENT, EQUIPMENT DESIGN, LANGUAGE INSTRUCTION,

A SERIES OF BRIEF DISCUSSIONS ARE GIVEN OF LANGUAGE LABORATORIES WITH RESPECT TO--(1) HOW STUDENTS USE THE FACILITIES, (2) COMPONENTS, (3) GROUP USE AND INDIVIDUAL STUDY, (4) SCHEDULING IN A CURRICULUM, (5) LOCATION IN THE SCHOOL, (6) DESIGN OF THE FACILITIES, (7) RECENT DEVELOPMENTS, AND (8) FUTURE PROJECTION. (JT)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED017140

SKETCH BOOK-

ARCHITECTURE AND EQUIPMENT FOR THE LANGUAGE LABORATORY

BY CHARLES WILLIAM BRUBAKER
PERKINS & WILL, ARCHITECTS

LANGUAGE SKILL, SO NECESSARY FOR READING, WRITING, AND ORAL COMMUNICATION, IS ALSO ESSENTIAL FOR THE UNDERSTANDING OF FOREIGN CULTURES. SINCE THE LANGUAGE LEARNING PROCESS INVOLVES 1) UNDERSTANDING BY HEARING, 2) SPEAKING, 3) READING, AND 4) WRITING, IT IS APPARENT THAT EFFECTIVE LISTENING AND SPEAKING PRACTICE IS WORTH SEEKING. THE LANGUAGE LABORATORY, UNKNOWN 15 YEARS AGO, HAS BECOME AN EFFECTIVE TOOL FOR LEARNING. IN THIS STUDY, WE EXPLORE USES AND FUNCTIONS, BELIEVING THAT COMPREHENSION IS ESSENTIAL TO THE PROPER DESIGN AND SELECTION OF EQUIPMENT, AND IS AN ESSENTIAL INGREDIENT IN THE ARCHITECTURE OF SCHOOLS THAT ARE TO SERVE NOT ONLY TODAY'S KNOWN PROGRAMS BUT ALSO TOMORROW'S UNKNOWN PROGRAMS.

SKETCHBOOK PREPARED FOR THE CONFERENCE AT PURDUE UNIVERSITY, MARCH 23-25, 1961
"MATERIALS AND TECHNIQUES FOR THE LANGUAGE LABORATORY."

JOINTLY SPONSORED BY INDIANA UNIVERSITY AND PURDUE UNIVERSITY

AND MADE POSSIBLE BY A GRANT FROM THE EDUCATIONAL FACILITIES LABORATORIES.

001247

"IT IS CLEAR THAT THE LANGUAGE LABORATORY IS DEFINITLY ESTABLISHED AS A BASIC INGREDIENT IN A SUCCESSFUL FOREIGN LANGUAGE PROGRAM. THE LANGUAGE LABORATORY NOT ONLY IS INCLUDED IN MOST PREDICTIONS OF WHAT THE FUTURE SCHOOL WILL BE LIKE, BUT ALSO HOLDS PROMISES OF EVEN TRANSFORMING ITSELF INTO THE NEW CONCEPT OF THE TEACHING MACHINE."

(Joseph C. Hutchinson, at the 1960 Conference at Indiana University)

" STUDENTS SHOULD HAVE OPPORTUNITIES TO REACH EDUCATIONAL GOALS FAR BEYOND THOSE USUALLY PROVIDED IN TODAY'S SCHOOLS.

" THE SIZE AND NATURE OF INSTRUCTIONAL GROUPS SHOULD VARY WITH THE PURPOSES TO BE ACHIEVED AND THE CONTENT TO BE LEARNED.

"SCHEDULES SHOULD PERMIT FLEXIBLE PROGRAMS AND STILL ACCOUNT ACCURATELY FOR STUDENTS.

"THE CURRICULUM SHOULD IMPEL MAXIMUM DEVELOPMENT OF THE INTELLECTUAL POWERS OF ALL STUDENTS.

" MORE VIGOROUS EFFORTS SHOULD BE MADE TO BRING THE MEANS OF COMMUNICATING IDEAS ABREAST OF THE LATEST SCIENTIFIC ADVANCES."

—Some notes from "NEW DIRECTIONS TO QUALITY EDUCATION" by J. Lloyd Trump.

LANGUAGE LABORATORY ARCHITECTURE AND EQUIPMENT ARE DETERMINED BY HOW THE STUDENT STUDIES

LISTENING ONLY
(AUDIO-PASSIVE)

THE STUDENT, WEARING HEADPHONES, HEARS THE MASTER RECORD OR TAPE RECORDING.

LISTENING & RESPONDING
(AUDIO-ACTIVE)

THE STUDENT LISTENS TO THE MASTER RECORDING, RESPONDS INTO HIS MICROPHONE AND HEARS HIS OWN VOICE INSTANTANEOUSLY THRU HIS HEADPHONES.

LISTENING, RESPONDING, RECORDING & COMPARING
(AUDIO-ACTIVE-COMPARATIVE)

THE STUDENT LISTENS TO THE MASTER RECORDING, RESPONDS, AND RECORDS ON TAPE BOTH THE MASTER VOICE AND HIS OWN VOICE. HE THEN PLAYS BACK THE TAPE TO COMPARE THE MASTER AND HIS OWN VOICE.

INDIVIDUAL STUDY

SAME AS ABOVE EXCEPT EACH STUDENT CAN WORK INDEPENDENTLY (AT HIS OWN LEVEL AND RATE) WITH MASTER TAPES ON HIS OWN RECORDER.

LANGUAGE LABORATORY COMPONENTS -

FOR THE GROUP (USUALLY AT THE TEACHER'S CONSOLE)

RECORD PLAYER

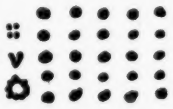
TEACHER CAN PLAY RECORDS

TAPE RECORDER & PLAYBACK

TEACHER CAN MAKE RECORDINGS AND PLAY MASTER TAPES

TEACHER CAN RECORD STUDENTS' RESPONSES

CONTROL PANEL



TEACHER CAN MONITOR, RECORD, AND COMMUNICATE WITH ANY STUDENT

MANY PROGRAM SOURCES

TEACHER CAN DIRECT MANY DIFFERENT PROGRAMS TO DIFFERENT STUDENTS

FOR THE INDIVIDUAL STUDENT (AT HIS OWN PLACE)

HEAD-PHONES

STUDENT CAN LISTEN TO RECORDINGS

MICRO-PHONE

STUDENT CAN LISTEN AND RESPOND AND HEAR HIS OWN VOICE.

STUDENT TAPE RECORDERS

STUDENT CAN RECORD BOTH MASTER AND HIS OWN VOICE AND COMPARE.

CHANNEL SELECTOR

STUDENT CAN SELECT HIS PROGRAM

INDIVIDUAL TAPE RECORDER

STUDENT CAN USE MASTER TAPES TO SUIT HIS OWN NEEDS AND AT HIS OWN RATE.

COORDINATED VISUAL AIDS

STUDENT CAN SEE THE CULTURE OF THE LANGUAGE.

TWO BASIC TYPES OF LANGUAGE LABORATORIES-

1. REGULAR CLASS-ASSIGNED GROUP USE

- A PART OF THE REGULAR CLASS ASSIGNMENT.
- CLASS USES THE LAB ON GROUP BASIS, DIRECTED BY TEACHER.
  (FOR EXAMPLE — 2 OR 3 HALF-HOUR PERIODS EACH WEEK)
- COMMONLY USED IN HIGH SCHOOLS

2. INDEPENDENT STUDY FACILITY INDIVIDUAL USE

- A SUPPLEMENT TO CLASSROOM INSTRUCTION
- EACH STUDENT USES LAB ON INDIVIDUAL BASIS
  (WHENEVER HIS OWN SCHEDULE PERMITS)
- COMMONLY USED IN COLLEGES
  BUT ALSO RECOMMENDED FOR HIGH SCHOOLS

OTHER POSSIBILITIES-

"MOBILE LAB"
ROLLS INTO MANY ROOMS-

PRACTICE OR "DRILL ROOM"
... CLASS LISTENS, & RESPONDS IN CHORUS
(ONLY PLAYER & SPEAKER REQUIRED)

"LANGUAGE LOUNGE"
FOR GROUP CONVERSATION EXPERIENCE & PRACTICE.

"PROGRAM CENTER"
(EQUIPMENT)
SERVING MANY SPACES THRUOUT THE SCHOOL

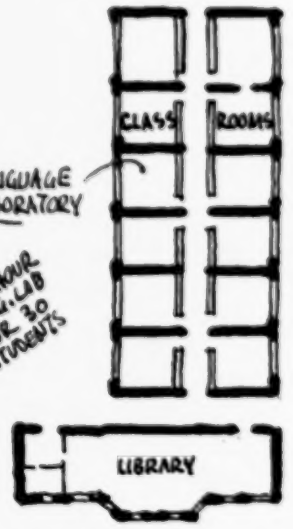
SCHEDULING

CLASSES OF 30 AND
UNVARYING, RIGID SCHEDULES CREATE UNVARYING RIGID ROWS OF CLASSROOMS

MON	TUES	WED	THURS	FRI
ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH
SCIENCE	SCIENCE	SCIENCE	SCIENCE	SCIENCE
STUDY HALL	STUDY HALL	STUDY HALL	STUDY HALL	STUDY HALL
LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
LANGUAGE	LANGUAGE	LANGUAGE	LANGUAGE	LANGUAGE
SOCIAL SCIENCE	SOCIAL SCIENCE	SOCIAL SCIENCE	SOCIAL SCIENCE	SOCIAL SCIENCE
PHYS. ED.	PHYS. ED.	PHYS. ED.	PHYS. ED.	PHYS. ED.

SAME HOUR CLASS DAILY FOR 30 STUDENTS

FULL HOUR LANG. LAB FOR 30 STUDENTS



CLASSES OF VARYING SIZE
AND FLEXIBLE INDIVIDUAL SCHEDULES CREATE FLEXIBLE LEARNING SPACES

MON	TUES	WED	THURS	FRI
STUDY	ENGLISH	STUDY	ENGLISH	STUDY
ENGLISH		ENGLISH		ENGLISH
SCIENCE	LANGUAGE	SCIENCE	LANGUAGE	STUDY
	STUDY		STUDY	
	SCIENCE		SCIENCE	
LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
LANGUAGE	SOCIAL SCIENCE	LANGUAGE	SOCIAL SCIENCE	COMBINED LANGUAGE SOCIAL SCIENCE
SOCIAL SCIENCE	PHYS. ED.	SOCIAL SCIENCE	PHYS. ED.	
INDIV. STUDY		INDIV. STUDY		INDIV. STUDY

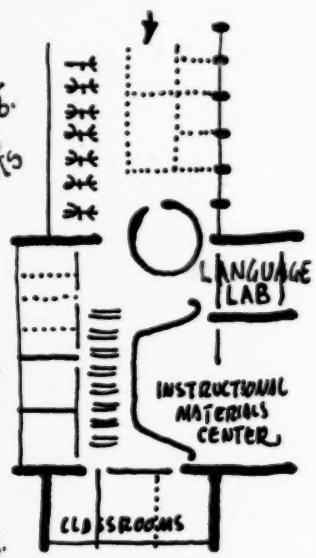
HALF HOUR LANG. LAB FOR 40 STUDENTS

FULL HOUR LANG. CLASS FOR 20 STUDENTS

HALF HOUR LANG. LAB. FOR 40 STUDENTS

1½ HOUR FOREIGN CULTURE CLASS

INDIVIDUAL LANG. STUDY IN LIBRARY AS REQ'D.

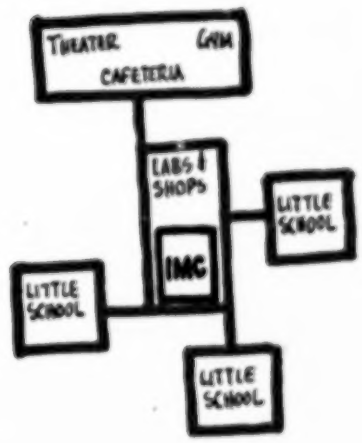


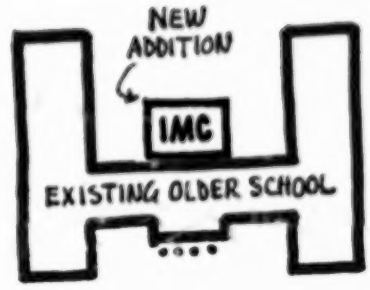
LANGUAGE LABORATORY

LOCATION IN THE SCHOOL -

SINCE TAPES, RECORDS, SLIDES & FILMS ARE USED — AND BECAUSE IT IS A LIBRARY-STUDY FACILITY (IN ADDITION TO BEING A CLASSROOM)

THE LANGUAGE LABORATORY SHOULD BE A PART OF THE INSTRUCTIONAL MATERIALS CENTER (IMC) AT THE HEART OF THE SCHOOL ...



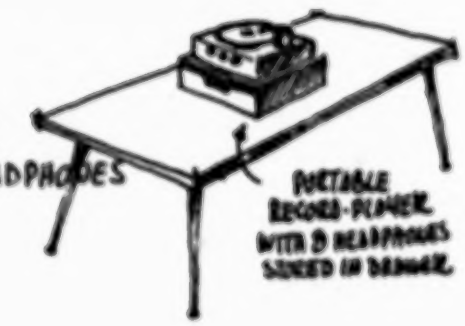


FOR ADDITIONAL NOTES ON THE "IMC" SEE "PLANNING SCHOOLS FOR NEW MEDIA" BY DE BERNARDIS, DOHERTY, HUMMEL, & BRUBAKER.

LABORATORY DESIGN-

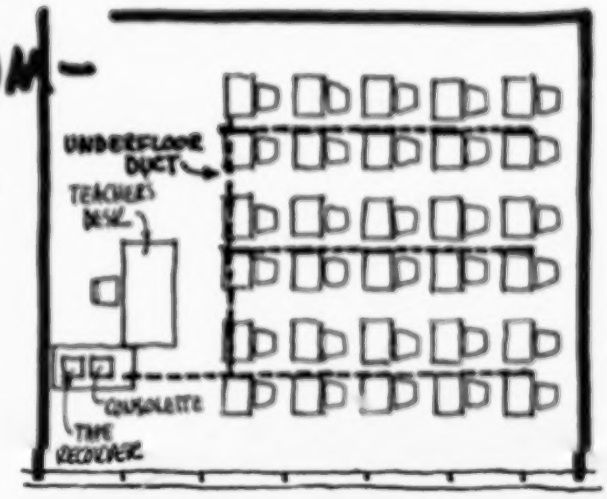
MINIMUM FACILITY FOR ELEMENTARY SCHOOLS -

STUDENTS SIT AROUND TABLE
FOR LISTENING ONLY - WITH HEADPHONES



LANGUAGE LABORATORY USING REGULAR DESKS IN STANDARD CLASSROOM -

EXAMPLE:
"COUSINO



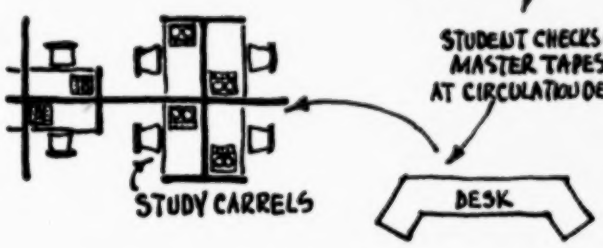
INDIVIDUAL STUDY-

(ONE STUDENT USING MASTERTAPES INDIVIDUALLY AND AT HIS OWN RATE...)

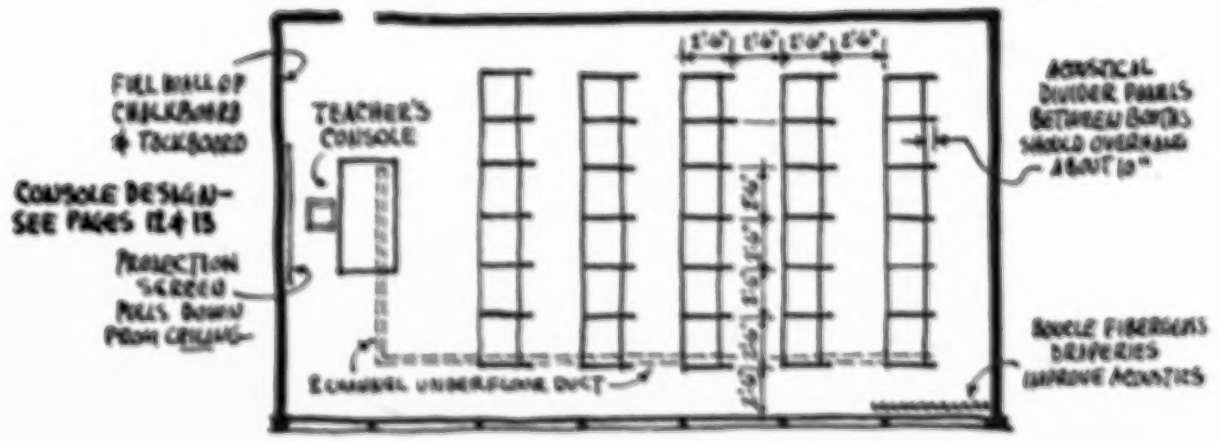
- CAN OCCUR IN A LAB. PROPERLY EQUIPPED -
BUT ALSO CAN OCCUR IN THE LIBRARY OR IN ONE STUDENT'S Q-SPACE -

Q FOR QUEST

- SPACE FOR INDIVIDUAL LEARNING.

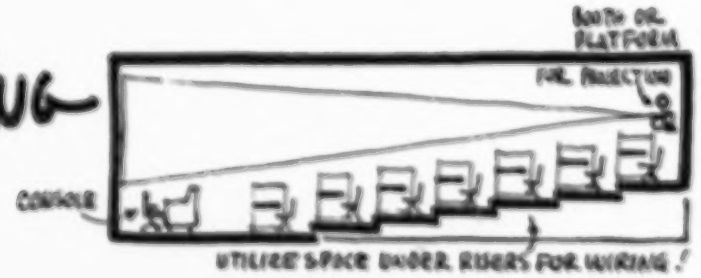


TYPICAL 30 BOOTH LANGUAGE LABORATORY-


BOOTH DESIGN- SEE PAGES 10 & 11
FULL WALL OF CHALKBOARD & TACKBOARD
CONSOLE DESIGN- SEE PAGES 12 & 13
PROJECTION SCREEN PULLS DOWN FROM CEILING
TEACHER'S CONSOLE
5'-0" 5'-0" 5'-0" 5'-0"
ACOUSTICAL DIVIDER PANELS BETWEEN BOOTHS SHOULD OVERHANG ABOUT 10"
BOUCLE FIBERGLASS DRAPERIES IMPROVE ACOUSTICS
RUMMEL UNDERFLOOR DUCT

STEPPED FLOOR IMPROVES VIEWING-

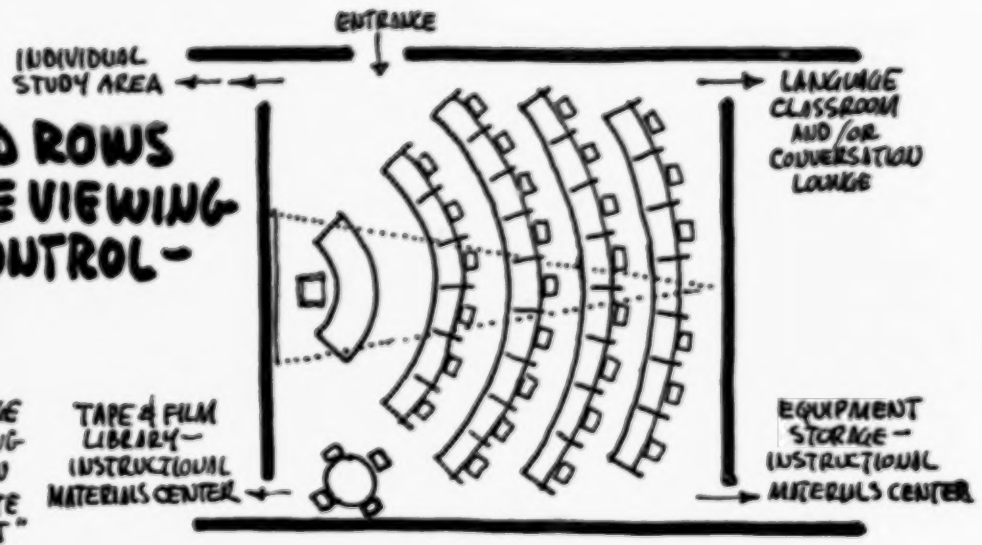
EXAMPLE:
PURDUE'S NEW LABS IN COULTER HALL.



CURVED ROWS IMPROVE VIEWING AND CONTROL-

EXAMPLE:
ECKEL

"SPOKEN LANGUAGE GAINS IN MEANING BY ITS RELATION TO THE IMMEDIATE VISUAL CONTEXT"
-(Elton Hocking)


ENTRANCE
INDIVIDUAL STUDY AREA
LANGUAGE CLASSROOM AND/OR CONVERSATION LOUNGE
TAPE & FILM LIBRARY- INSTRUCTIONAL MATERIALS CENTER
EQUIPMENT STORAGE- INSTRUCTIONAL MATERIALS CENTER

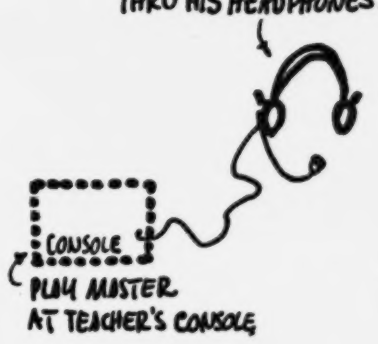
DESIGN OF STUDENT BOOTHS -

THREE MAJOR FUNCTIONAL TYPES:

MOST ECONOMICAL TYPE →

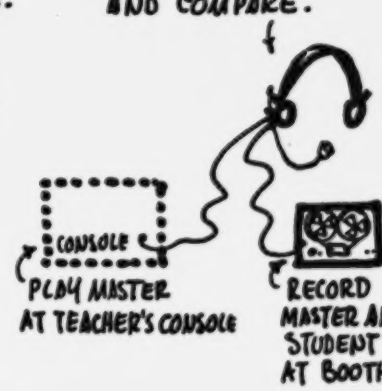
I AUDIO-ACTIVE

STUDENT HEARS MASTER TAPE THRU HEADPHONES, RESPONDS BY SPEAKING INTO HIS MICROPHONE, HEARS HIMSELF INSTANTANEOUSLY THRU HIS HEADPHONES.



II AUDIO-ACTIVE-COMPARATIVE

STUDENT CAN RECORD BOTH THE MASTER AND HIS OWN SPEECH ON TAPE, THEN PLAYBACK THE RECORDING, LISTEN AND COMPARE.



III INDIVIDUAL STUDY

STUDENT CAN WORK INDEPENDENTLY WITH APPROPRIATE MASTER TAPE, RECORD BOTH MASTER AND HIS OWN RESPONSES, THEN PLAYBACK THE RECORDING FOR COMPARISON & STUDY.

MOST EXPENSIVE (BUT MOST USEFUL.) →

FOR REGULAR CLASS USE ..... TEACHER CAN DIRECT DIFFERENT PROGRAMS TO VARIOUS GROUPS IN THE CLASS.

FOR BOTH CLASS AND LIBRARY OR INDIVIDUAL STUDY.

THE STUDENT CAN -

I **LISTEN** TO MASTER LESSONS.

I **RESPOND** AND HEAR HIS OWN VOICE.

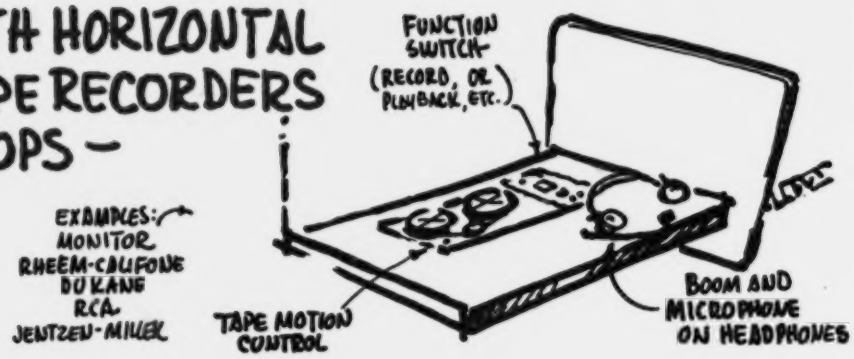
I **COMMUNICATE** WITH THE TEACHER, AND OTHER STUDENTS.

II **RECORD** BOTH THE MASTER AND HIS OWN VOICE.

II **COMPARE** HIS OWN VOICE WITH THE MASTER MODEL VOICE.

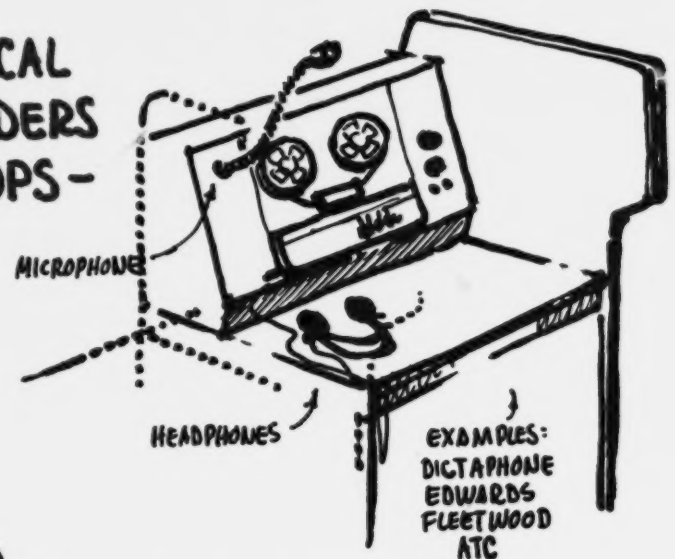
III **STUDY INDIVIDUALLY** WORKING WITH A SPECIAL MASTERTAPE APPROPRIATE TO HIS OWN NEEDS ... AND AT HIS OWN RATE.

BOOTHS WITH HORIZONTAL STUDENT TAPE RECORDERS IN DESK TOPS –



EXAMPLES:
MONITOR
RHEEM-CALIFONE
DUKANE
RCA
JENTZEN-MILLER

BOOTHS WITH VERTICAL STUDENT TAPE RECORDERS AT FRONT OF DESK TOPS –

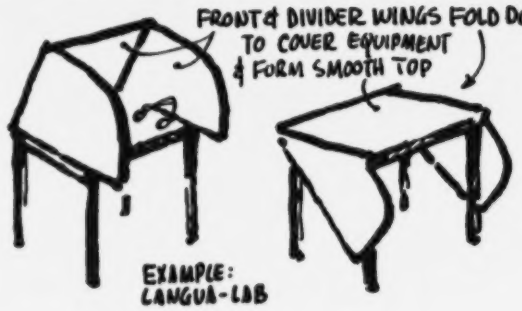


EXAMPLES:
DICTAPHONE
EDWARDS
FLEETWOOD
ATC
BERNCO

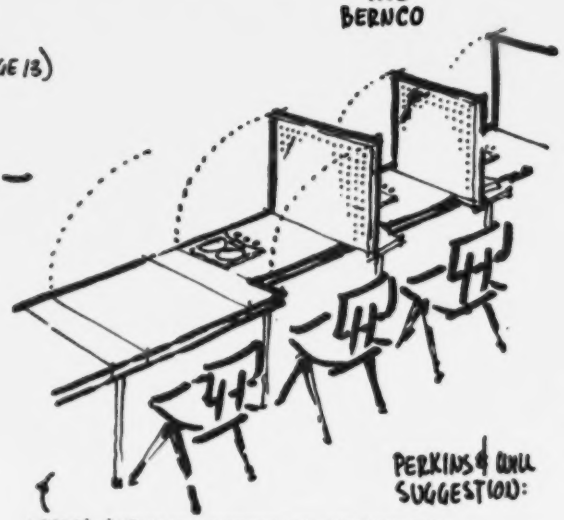
BOOTHS WITH STUDENT RECORDERS AT REMOTE LOCATION –

EITHER AT TEACHER'S CONSOLE (SEE AMERICAN SEATING, PAGE 13)
OR AT REMOTE CABINET (SEE PAGE 15)

CONVERTIBLE BOOTHS –

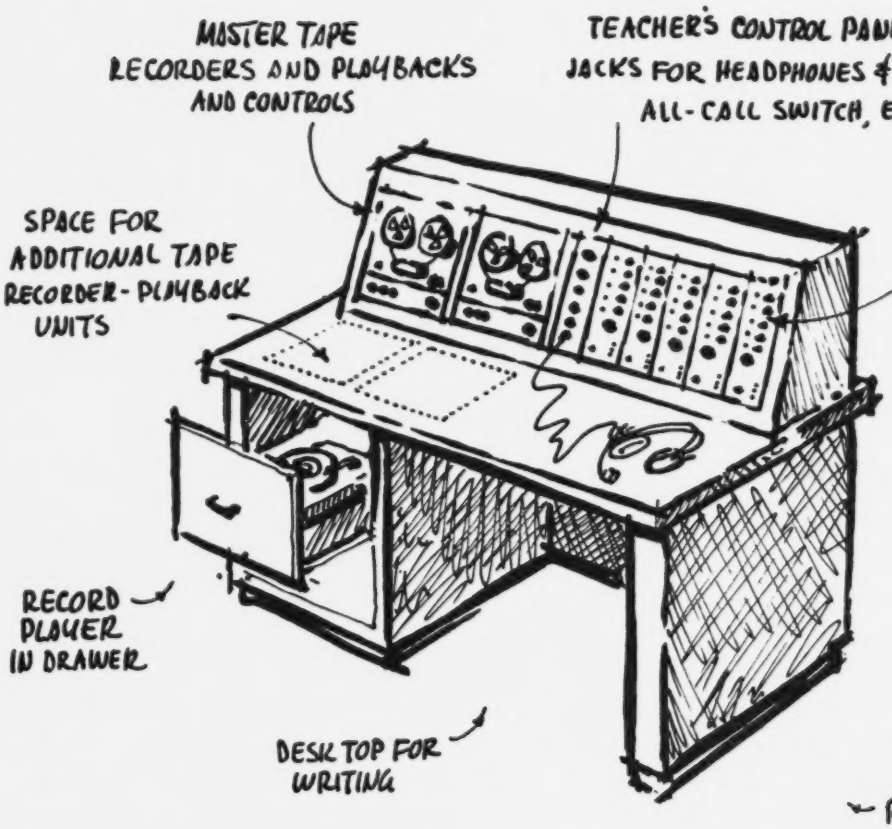


EXAMPLE:
LANGUA-LAB



PERKINS & WILL SUGGESTION:
WHEN AUDIO EQUIPMENT IS NOT IN USE, CONTINUOUS SMOOTH TABLE TOP SERVES OTHER NEEDS

DESIGN OF TEACHER'S CONSOLE -


MASTER TAPE RECORDERS AND PLAYBACKS AND CONTROLS
TEACHER'S CONTROL PANEL — JACKS FOR HEADPHONES & MICROPHONE, ALL-CALL SWITCH, ETC.
SPACE FOR ADDITIONAL TAPE RECORDER-PLAYBACK UNITS
MASTER CONTROL SWITCH PANELS ENABLE TEACHER TO MONITOR, RECORD, OR COMMUNICATE WITH ANY STUDENT.
RECORD PLAYER IN DRAWER
DESK TOP FOR WRITING

TYPICAL CONSOLE —

EXAMPLES:
— RHEEM CALIFONE
HAMILTON
MONITOR
RCA

THE TEACHER CAN —

DIRECT DIFFERENT LESSON PROGRAMS TO SELECTED STUDENTS.

DIVIDE CLASS INTO GROUPS

MONITOR (LISTEN TO) EACH INDIVIDUAL STUDENT'S RESPONSES.

COMMUNICATE WITH ANY STUDENT, TO CORRECT & INSTRUCT.

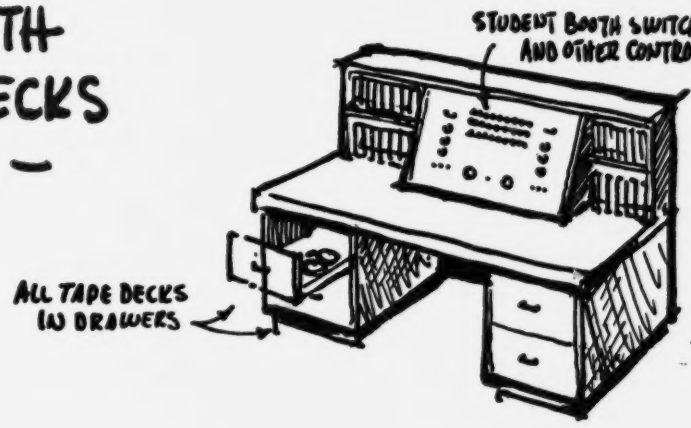
RECORD ANY STUDENT'S RESPONSES ON A TAPE AT THE CONSOLE.

TALK TO AN INDIVIDUAL, A ROW, A GROUP OR TO THE ENTIRE CLASS.

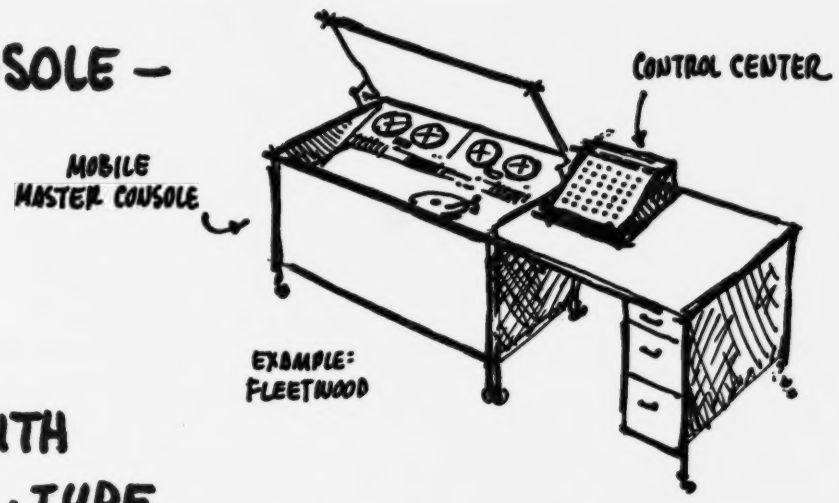
BROADCAST ONE, OR TWO STUDENTS' CONVERSATION TO A GROUP OR THE CLASS.

DUPLICATE MASTER TAPES, AND RECORD MASTER LESSONS ON TAPE.

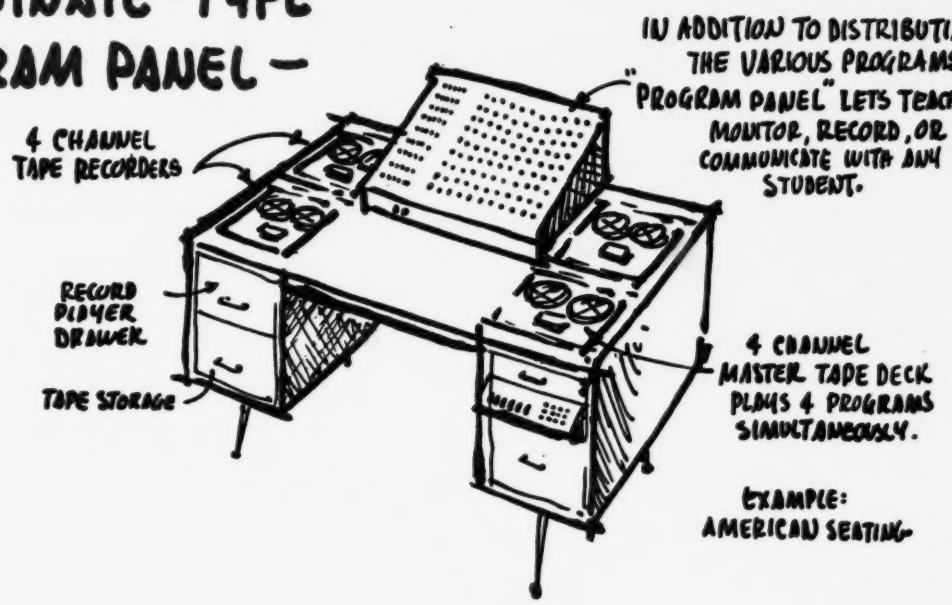
CONSOLE WITH ALL TAPE DECKS IN DRAWERS —



MOBILE CONSOLE —



CONSOLE WITH COORDINATE · TYPE PROGRAM PANEL —


IN ADDITION TO DISTRIBUTING THE VARIOUS PROGRAMS, "PROGRAM PANEL" LETS TEACHER MONITOR, RECORD, OR COMMUNICATE WITH ANY STUDENT.
4 CHANNEL TAPE RECORDERS
RECORD PLAYER DRAWER
TAPE STORAGE
4 CHANNEL MASTER TAPE DECK PLAYS 4 PROGRAMS SIMULTANEOUSLY.
EXAMPLE: AMERICAN SEATING

SOME RECENT DEVELOPMENTS-

REMINDER: LANGUAGE IS MULTI-SENSORY" (Hocking)

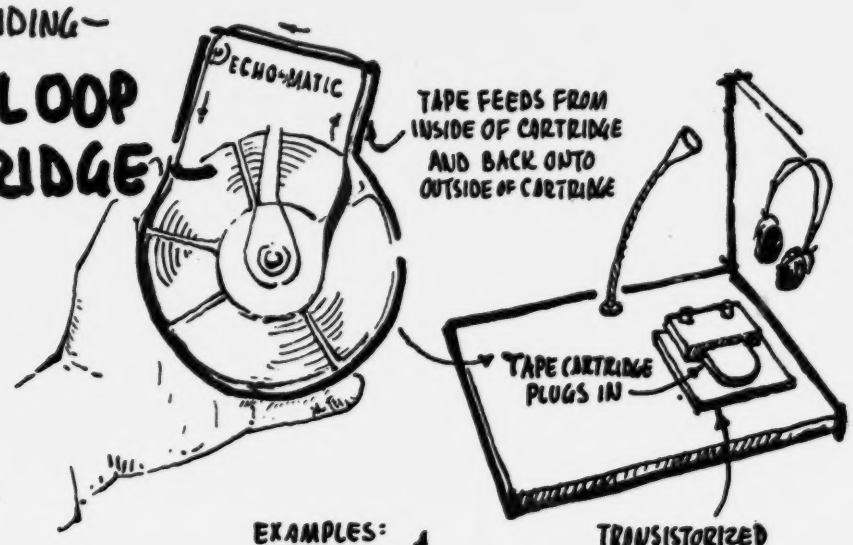
TREND: COORDINATED USE OF AUDIO AND VISUAL MATERIALS

- OBJECTS, MODELS
  MAPS, POSTERS
- PHOTOGRAPHS, SLIDES, FILMSTRIP
  (EXAMPLE: SVE)
- MOTION PICTURES
  (EXAMPLE: RECENT PURDUE FILMS FOR LANGUAGE LABS.)
- AND NEXT...
  VIDEO-TAPE!

"... WE CAN EXPECT EVEN GREATER REINFORCEMENT IN THE VISUAL AIDS IN THE NEAR FUTURE AS A RESULT OF... PROJECTS WHICH ARE COMPLETELY INTEGRATING AUDIO AND VISUAL MATERIALS FOR CLASS AND LABORATORY WORK."
(Hutchinson)

TO ELIMINATE RE-WINDING-

ENDLESS LOOP TAPE CARTRIDGE



NOTE:
SIMPLICITY OF OPERATION SOMETIMES REQUIRES COMPLEXITY OF EQUIPMENT!
THEREFORE -
WE SHOULD SEEK EQUIPMENT "AS RELIABLE AS THE DIAL TELEPHONE" (WM. LOCKE)

EXAMPLES:
COUSINO
LINGUA-TRAINER
ELECTROFONIC

TRANSISTORIZED 2-TRACK REPEATER-RECORDER

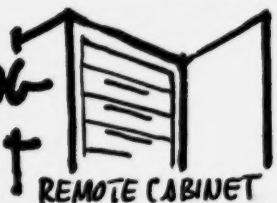
DESIRE FOR SIMPLICITY OF OPERATION AND BROAD SELECTION OF MASTER TAPES:

PERHAPS TOO MUCH EQUIPMENT IN FRONT OF THE STUDENT DETRACTS HIM FROM LANGUAGE.

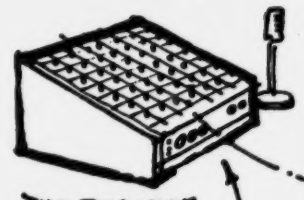
THE STUDENT SHOULD HAVE AVAILABLE TO HIM MANY MASTER TAPES THAT VARY IN DIFFICULTY, KIND, AND NATIVE VOICE.

TREND: AUTOMATIC REMOTE CONTROL LANGUAGE LAB SYSTEM

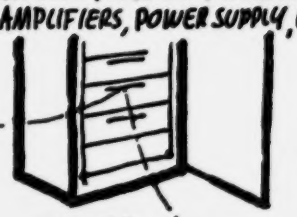
REMOTE HOUSING OF EQUIPMENT



REMOTE CABINET HOUSES ALL EQUIPMENT, MASTER & STUDENT RECORDERS, AMPLIFIERS, POWER SUPPLY, ETC.



THE TEACHER HAS ONLY A TABLE TOP CONSOLE – TO SELECT PROPER CHANNEL FOR EACH STUDENT, ETC.

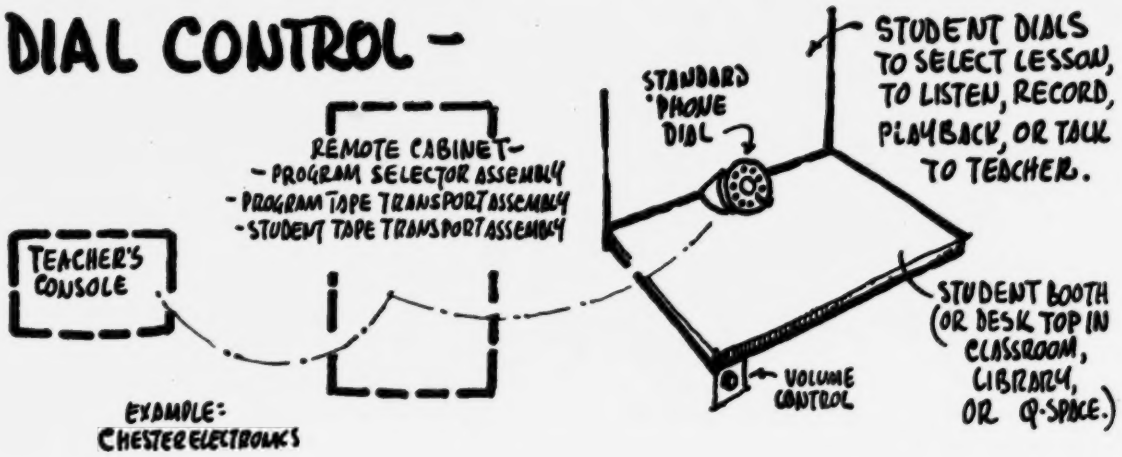


EXAMPLE: LINGUA-TRAINER

THE STUDENT HAS ONLY –

- HEADPHONES WITH MICROPHONE ON BOOM
- RECORD/PLAYBACK SWITCH
- PILOT LIGHT "ON" FOR RECORDING
- AND VOLUME CONTROL.

DIAL CONTROL –


REMOTE CABINET –
- PROGRAM SELECTOR ASSEMBLY
- PROGRAM TAPE TRANSPORT ASSEMBLY
- STUDENT TAPE TRANSPORT ASSEMBLY
TEACHER'S CONSOLE
EXAMPLE: CHESTER ELECTRONICS
STANDARD PHONE DIAL
STUDENT DIALS TO SELECT LESSON, TO LISTEN, RECORD, PLAYBACK, OR TALK TO TEACHER.
VOLUME CONTROL
STUDENT BOOTH (OR DESK TOP IN CLASSROOM, LIBRARY, OR Q-SPACE.)

TOMORROW—

STUDENTS WILL HAVE
MORE OPPORTUNITY FOR
INDIVIDUAL STUDY.

LANGUAGE LABORATORY SYSTEMS
WILL BECOME MORE AUTOMATIC
WITH SIMPLICITY OF OPERATION, AND
BROAD SELECTION OF MATERIALS.

SYSTEMS MAY
BECOME WIRELESS.

AUDIO AND VISUAL MATERIALS
WILL BE COORDINATED.

VIDEO-TAPE WILL SERVE
GROUP AND INDIVIDUAL LEARNING.

THE TEACHING MACHINE
(SUPPLYING THE READING-WRITING-TESTING ELEMENTS)
MAY JOIN THE AUDIO & VISUAL COMPONENTS.

THE "LANGUAGE LABORATORY" MAY BECOME
THE LEARNING LABORATORY

—ALL FOR MORE EFFECTIVE LANGUAGE LEARNING.

—A STUDY FOR THE EDUCATIONAL FACILITIES LABORATORIES
BY CHARLES WILLIAM BRUBAKER; PERKINS & WILL, ARCHITECTS 1961